

Claim 15 (amended). The [reagent] composition of claim 14, wherein said disulfide reducing agent is a phosphine.

Claim 16 (amended). The [reagent] composition of claim 15, wherein said phosphine is tris(carboxyethyl) phosphine.

Claim 19 (amended). A kit for use in a method for detecting and determining the amount of homocysteine in a sample, comprising in a packaged combination: a first reagent comprising [a protected] an alkylating reagent having a protected functional group said protected function group capable of reacting with a nucleophilic group of homocysteine [capable of chemically modifying homocysteine] to form modified homocysteine when said protected functional group is deprotected, a second reagent comprising an activating reagent capable of deprotecting said protected alkylating reagent, and a third reagent capable of specifically binding to said modified homocysteine, each in an amount sufficient to conduct at least one assay.

Claim 32 (amended). A method of determining the amount of homocysteine in a sample suspected of containing said homocysteine, comprising the steps of :

- (a) bringing together in an aqueous medium:
  - (1) said sample,
  - (2) a first reagent comprising [a protected] an alkylating reagent having a protected functional group said protected functional group capable of being activated to chemically modify the sulfhydryl groups of homocysteine to form modified homocysteine, and
  - (3) a second reagent comprising [a ligand] an antibody capable of specifically binding to said modified homocysteine to form an immunocomplex; and
  - (4) a third reagent capable of activating said protected alkylating reagent.

- (b) measuring the amount of said immunocomplex, the amount thereof being related to the amount of homocysteine in said sample.

Claim 44 (amended). A method of determining the amount of homocysteine in a sample, wherein at least a portion of said homocysteine is in the free disulfide form, comprising the steps of:

- (a) preparing an admixture comprising:
- (1) said sample,
  - (2) a releasing agent to release said homocysteine from the disulfide form,
  - (3) [a protected] an alkylating reagent having a protected functional group said protected functional group capable of being activated to chemically modify the sulfhydryl groups of homocysteine to form modified homocysteine, and
  - (4) [a receptor] an antibody capable of specifically binding to said modified homocysteine to form an immunocomplex[;], and
  - (5) an activating reagent capable of deprotecting said protected functional group of said alkylating reagent[.]; and
- (b) examining said medium for the amount of said immunocomplex, the amount thereof being related to the amount of homocysteine in said sample.

Please delete claim 46.

#### REMARKS

Claims 1, 14-16, 19 and 21-30, 32, 33, 37-44 and 46 are in the case. Claims 1, 15, 16, 19, 32, 44 and 46 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Claims 1 and 14 were rejected under 35 U.S.C. §102(b,e) as being anticipated by Metzger et al. U.S. Patent No. 5,700,910 (Metzger). Claims 1, 14-16, 19, 21-30, 32, 33, 37-44 and 46 were



Claims (Clean Copy)

a1  
31b  
81  
Claim 1 (amended). A composition comprising an alkylating reagent having a protected functional group said protected functional group capable of reacting with a nucleophilic group when deprotected wherein the protected functional group is unreactive to a nucleophilic group when in the presence of a nucleophilic group.

a2  
Claim 15 (amended). The composition of claim 14, wherein said disulfide reducing agent is a phosphine.

Claim 16 (amended). The composition of claim 15, wherein said phosphine is tris(carboxyethyl) phosphine.

a3  
31b  
83  
Claim 19 (amended). A kit for use in a method for detecting and determining the amount of homocysteine in a sample, comprising in a packaged combination: a first reagent comprising an alkylating reagent having a protected functional group said protected function group capable of reacting with a nucleophilic group of homocysteine to form modified homocysteine when said protected functional group is deprotected, a second reagent comprising an activating reagent capable of deprotecting said protected alkylating reagent, and a third reagent capable of specifically binding to said modified homocysteine, each in an amount sufficient to conduct at least one assay.

a4  
31b  
83  
Claim 32 (amended). A method of determining the amount of homocysteine in a sample suspected of containing said homocysteine, comprising the steps of :

- (c) bringing together in an aqueous medium:
- (5) said sample,
  - (6) a first reagent comprising an alkylating reagent having a protected functional group said protected

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functional group capable of being activated to chemically modify the sulfhydryl groups of homocysteine to form modified homocysteine, and a second reagent comprising an antibody capable of specifically binding to said modified homocysteine to form an immunocomplex; and

(8) a third reagent capable of activating said protected alkylating reagent.

(d) measuring the amount of said immunocomplex, the amount thereof being related to the amount of homocysteine in said sample.

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Claim 44 (amended). A method of determining the amount of homocysteine in a sample, wherein at least a portion of said homocysteine is in the free disulfide form, comprising the steps of:

- (c) preparing an admixture comprising:
- (6) said sample,
  - (7) a releasing agent to release said homocysteine from the disulfide form,
  - (8) an alkylating reagent having a protected functional group said protected functional group capable of being activated to chemically modify the sulfhydryl groups of homocysteine to form modified homocysteine, and
  - (9) an antibody capable of specifically binding to said modified homocysteine to form an immunocomplex, and
  - (10) an activating reagent capable of deprotecting said protected functional group of said alkylating reagent; and
- (d) examining said medium for the amount of said immunocomplex, the amount thereof being related to the amount of homocysteine in said sample.